



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/131,141	08/07/1998	MOHAN V. KALKUNTE	82771P.270	7385
8791	7590	06/03/2004	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD, SEVENTH FLOOR LOS ANGELES, CA 90025			DUONG, FRANK	
			ART UNIT	PAPER NUMBER
			2666	29

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/131,141

Applicant(s)

KALKUNTE ET AL.

Examiner

Frank Duong

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2666

DETAILED ACTION

1. This Office Action is a response to the communication dated 4/26/04. Claims 1-22 are pending in the application.

Terminal Disclaimer

2. The terminal disclaimer filed on 4/26/04 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 09/271,008 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/271,011. Although the conflicting claims are not identical,

they are not patentably distinct from each other because the claimed invention of claims 1-22 of the instant application encompasses the claimed invention of claims 1-18 of the above copending patent application for the same rationales stated in the Office Action dated 07/30/2002.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 9, 11 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Simmons.

Regarding **claim 9**, in according to Figure 1-3, 9, col. 6, line 5 to col. 10, line 12, Simmons discloses an apparatus (**Figures 2A-2B**) comprising:

a buffer having a plurality of records (32);

a network interface (28, 42, 66 and 70), coupled to the buffer (32), to receive a plurality of frames from the plurality of communication links (*col. 6, lines 5-20, elements 60, 62 and 36*), to store the frames in a corresponding plurality of records within the

Art Unit: 2666

buffer in order of receipt (col. 7, lines 47-56), and to assign a pointer value to each of the plurality of records denoting a relative order of frame transmission of each of the plurality of frames (*col. 8, lines 21-43*), the pointer value associated with each record in the buffer being used to determine an order *according to complete reception of the frame* (col. 7, lines 46-56) in which the corresponding frame is promoted from the buffer to a system state (*col. 8, lines 21-43*).

Regarding **claim 11**, the claim depends from base claim 9 (*see rationales discussed above pertaining the rejection of base claim 9*). At col. 6, lines 5-21, Simmons discloses that MAC 60, 62 and 36 (corresponding to "communication links") are part of multiport switch 12 (corresponding to "Ethernet network").

Regarding **claim 14**, the claim depends from base claim 9 (*see rationales discussed above pertaining the rejection of base claim 9*). In according to col. 8, lines 34-43, Simmons discloses buffer manager 65 takes the assigned frame pointer from the bottom of the output queue 67 using a frame pointer read bus 86, fetches the corresponding data frame in a DMA transaction from the location in an external memory 36 pointed to by the assigned frame pointer, and places the fetched data frame into the appropriate transmit FIFO 66 via a data bus 82 for transmission. Thus, the recitation thereat reads on the claimed limitations set forth as claimed.

5. Claims 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Muller et al (USP 6,021,132) (hereinafter "Muller").

Art Unit: 2666

Regarding **claim 19**, in according to Figs. 1-7, Muller discloses a network device (*Fig. 2; element 100 and description at col. 5, line 9 to col. 6, line 41*) to communicate with other network device (100) through a multi-link trunk (141), the network device comprising:

a buffer having a plurality of records (230);

a network interface (205 or 225), coupled to the buffer (230) and the multi-link trunk (141), to receive a plurality of frames from the multi-link trunk (*col. 5, line 51*), to store the frames in the corresponding plurality of records in the buffer in order of receipt (*col. 5, lines 55-57*), and to assign a pointer value to each of the plurality of records denoting a relative order of frame transmission of each of the plurality of frames (*col. 5, lines 52-54*), the pointer value associated with each record in the buffer being used to determine an order *according to complete reception of the frame* (*col. 6, lines 45-51*) in which the corresponding frame is promoted from the buffer to a system state without modifying the corresponding frame (*col. 7, lines 20-41*).

Regarding **claim 20**, in addition to features recited in base claim 19 (see *rationales pertaining the rejection of base claim 19 discussed above*), Muller further discloses wherein the multi-link trunk (141) is comprised of a plurality of physical links (*see col. 4, lines 22-60; element 117*).

Regarding **claim 21**, in addition to features recited in base claim 19 (see *rationales discussed above*), Muller further discloses wherein the network interface receives, for each of the plurality of physical links comprising the multi-link trunk, an indication (*pointer request*) denoting the commencement of frame transmission on each

Art Unit: 2666

physical link, and uses the indication to assign pointer values (*see col. 6, line 66 and thereafter*).

Regarding **claim 22**, in addition to features recited in base claim 19 (*see rationales pertaining the rejection of base claim 19 discussed above*), Muller further discloses wherein the network interface promotes each of the plurality of frames stored in the buffer to a system state in order of pointer value, irrespective of an order in which they are stored in the buffer (*col. 7, lines 20-41*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellenger in view of Muller.

Regarding **claim 1**, in accordance with Bellenger reference entirety, Bellenger discloses a method for preserving frame order of a plurality of frames transmitted over a plurality of communication links (*see Fig. 3 and the abstract*), the method comprising:

receiving the plurality of frames transmitted over the plurality of communication links (*see Fig. 3; blocks 201-1 to 201-X*); asserting a plurality of indications each denoting the start of frame transmission on a corresponding communication links (*see col. 9, Bellenger discloses the flow detect logic 215 is coupled to the bus 210 (of Fig. 3)*

Art Unit: 2666

for the purpose of monitoring the frame received in the node to detect flows (corresponding to "asserting a plurality of indications denoting the start of frame transmission")); for each indication being received, generating a corresponding pointer value (*tag or hash value*) associated with the respective frame being transmitted over the corresponding communication link based, at least in part, on a relative order in which the respective indication is asserted, the corresponding pointer value associated with each respective frame being used to determine an order *according to complete reception of the frame* (col. 6, lines 45-51) in which the respective frame is promoted from a receive buffer (221) to a system state (*ports 201-1 to 201-N*) (see col. 9, line 6 to col. 10, line 25 and col. 15, lines 11-26, Bellenger discloses flow detect logic 215 generates identifying tags for the purpose of accessing the switch route table in the RDRAM 207. The arbiter 211 provides for arbitration amongst ports, the flow detect logic, the memory and the CPU for access to the bus, and other management necessary to accomplish the high speed transfer data from the ports to the frame buffers and back out to the port. The location 250 includes, among other fields, tag field 251 associated with a location by one or more of using the tag or a portion of the tag in the address, by storing all or part of the actual tag data in the addressed location, or by using other memory tag techniques such as hashing. Bellenger also discloses the block-unblock field 253 is used to block routing of frames corresponding to new entries, until it is assured that the first frame in the flow to which the entry corresponds, arrives at its destination before the node begins forwarding following frames in the flow to the destination using the route header, in order to preserve the order of the transmission of

Art Unit: 2666

the frames. In doing, Bellenger shows the corresponding pointer value associated with each respective frame being used to determine an order in which the respective frame is promoted from a receiver buffer to a system state). Bellenger fails to disclose the claimed limitation of *"generating a pointer value associated with a corresponding frame being transmitted over the corresponding communication link, the pointer value being based, at least in part, on a relative order in which the respective indication is asserted and differing from a pointer value associated with remaining frames of the plurality of frames, the corresponding pointer value associated with each respective frame being used to determine an order in which the respective frame is promoted from a receive buffer to a system state without modifying the respective frame"*. However, such limitation lacks thereof from Bellenger reference is well known and disclosed by Muller.

In the same field of endeavor, Muller (see the '132 patent entirety) teaches a method for shared memory management in a switched network element, comprising, among other things, the limitation of *"generating a pointer value associated with a corresponding frame being transmitted over the corresponding communication link, the pointer value being based, at least in part, on a relative order in which the respective indication is asserted and differing from a pointer value associated with remaining frames of the plurality of frames, the corresponding pointer value associated with each respective frame being used to determine an order according to complete reception of the frame in which the respective frame is promoted from a receive buffer to a system state without modifying the respective frame"* (see '132, col. 6, line 44 to col. 7, line 41

Art Unit: 2666

and Fig. 5 and col. 10, line 47 to col. 11, line 15) to provide a reduce buffer memory and scalable switch (see '132, col. 7, lines 30-41).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to implement Muller's teaching in Bellenger's method to arrive the claimed invention with a motivation to provide a reduce buffer memory and scalable switch (see '132, col. 7, lines 30-41).

Regarding **claim 2**, in addition to features recited in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), Bellenger in view of Muller further teaches reading the receiving frames out of the buffer based, at least in part, on the pointer value (see '054, col. 10, lines 47-52).

Regarding **claim 3**, in addition to features recited in base claim 2 (*see rationales pertaining the rejection of base claim 2 discussed above*), Bellenger in view of Muller further teaches wherein frames are read out of the buffer in an increasing pointer value order (see '054, col. 9, line 57 to col. 10, line 8, *Bellenger discloses block-unblock field 253 is used to block routing of frames corresponding to new entries, until it is assured that the first frame in the flow to which the entry corresponds, arrives at its destination before the node begins forwarding following frames in the flow to the destination using the route header, in order to preserve the order of the transmission of the frames. In doing, Bellenger shows the frames are read out of the buffer in an increasing pointer value order*).

Regarding **claim 6**, in addition to features recited in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), Bellenger in view of Muller

Art Unit: 2666

further teaches wherein the plurality of frames are a plurality of frame sizes (see '054, col. 11, lines 25-26).

Regarding **claim 7**, in addition to features recited in base claim 1 (see *rationales pertaining the rejection of base claim 1 discussed above*), Bellenger in view of Muller fails to disclose the claimed limitation of "*storing records in the buffer in an order which does not correspond to the order of frame transmission of the records*". '132, at col. 7, lines 12-22, Muller discloses packet forwarding scheme in which "*After a forwarding decision is received for a particular packet, the input port transfers ownership of the packet to an appropriate output port. Upon receipt of a buffer pointer, the output port stores the point in an output queue until it can be transmitted onto the attached link*". However, the limitation lacks thereof from Bellenger in view of Muller reference is deemed to be an obvious variation of Bellenger in view of Muller's packet forwarding scheme discussed.

Thus, it would have been obvious to those skilled in the art to recognize the limitation lacks thereof from Bellenger in view of Muller reference is an obvious variation of Bellenger in view of Muller's packet forwarding scheme discussed above or to modify Bellenger in view of Muller's packet forwarding scheme to include "*storing records in the buffer in an order which does not correspond to the order of frame transmission of the records*" to arrive the claimed invention with a motivation to improve memory management of a networking device (see '132, col. 2, lines 11-18).

Regarding **claim 8**, in addition to features recited in base claim 1 (see *rationales pertaining the rejection of base claim 1 discussed above*), Bellenger in view of Muller

Art Unit: 2666

fails to further disclose "*in an order different from an order in which the frames are stored in the buffer*". '132, at col. 7, lines 12-22, Muller discloses packet forwarding scheme in which "*After a forwarding decision is received for a particular packet, the input port transfers ownership of the packet to an appropriate output port. Upon receipt of a buffer pointer, the output port stores the point in an output queue until it can be transmitted onto the attached link*". However, the limitation lacks thereof from Bellenger in view of Muller reference is deemed to be an obvious variation of Bellenger in view of Muller's packet forwarding scheme discussed.

Thus, it would have been obvious to those skilled in the art to recognize the limitation lacks thereof from Bellenger in view of Muller reference is an obvious variation of Bellenger in view of Muller's packet forwarding scheme discussed above or to modify Bellenger in view of Muller's packet forwarding scheme to include "*in an order different from an order in which the frames are stored in the buffer*" to arrive the claimed invention with a motivation to improve memory management of a networking device (see '132, col. 2, lines 11-18).

7. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellenger in view of Muller as applied to claim 1 above, and further in view of Frazier.

Regarding **claims 4-5**, in addition to features recited in base claim 1 (see *rationales pertaining the rejection of base claim 1 discussed above*), the claims further call for wherein the data network is an Ethernet network and the indication is an analog indication/RX_DV signal. At col. 4, lines 4-15, Bellenger in view of Muller discloses all

Art Unit: 2666

ports on the switch node ['054, *figure 3*] execute a single local area network protocol. Preferably this protocol is an Ethernet protocol operated at 100 megabits per second or gigabit per second. Thus, Bellenger in view of Muller's data network is an Ethernet network. Bellenger in view of Muller fails to explicitly disclose the indication is an analog indication/RX_DV signal. However, such limitation is well-known in the gigabit Ethernet community and disclosed by Frazier.

In the gigabit Ethernet MII, it is defined that RX_DV signal is an analog signal the PHY asserted to the MAC when there is valid data on the RXD path. In according to '559, Figures 1, 3C-3D and 6, the abstract and col. 6, lines 6-9, col. 9, line 31 to col. 10, line 24, and col. 13, lines 39-42, Frazier discloses flow control method in a full duplex Ethernet network comprising, among other steps, the step of asserting a plurality of RX_DV signals denoting the start of frame transmission on a corresponding plurality of communication link (*note: '559, col. 6, lines 6-9, Frazier discloses when RX_DV is asserted on the MII, MAC receive processing logic accepts and process data from the physical layer, and then passes the processed data to the logical link control layer and col. 13, lines 39-42, Frazier discloses the receive carrier sense variable may be derived directly form the MII signal RX_DV, and is used to indicate incoming bits*).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to implement Frazier's teaching into Bellenger in view of Muller's method to arrive the claimed invention with a motivation to provide a method for preserving frame order having a flow control mechanism with a motivation to increase the network capacity.

Art Unit: 2666

8. Claims 10, 12-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Frazier.

Regarding **claims 10, 12 and 13**, the claim depends from base claim 9 (see *rationales discussed above pertaining the rejection of base claim 9*). In according Figs. 2A-2B, Simmons shows RX_DVA, RX_DVB and RX_DVC signals corresponding to receive data valid signals A, B and C. Moreover, at col. 8, lines 28-33, Simmons further discloses the port vector FIFO 63 assigns the frame pointer to the appropriate destination port(s) by placing frame pointer into the top of the appropriate output queue 67. Simmons fails to explicitly disclose the received data valid signals are an analog receive data valid signal denoting the commencement of frame transmission. However, the step of receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links is well known and discloses by Frazier.

In according to Figures 1, 3C-3D and 6, the abstract and col. 6, lines 6-9, col. 9, line 31 to col. 10, line 24, and col. 13, lines 39-42, Frazier discloses flow control method in a full duplex Ethernet network comprising, among other steps, the step of receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links (*note: col. 6, lines 6-9, Frazier discloses when RX_DV is asserted on the MII, MAC receive processing logic accepts and process data from the physical layer, and then passes the processed data to the logical link control layer and col. 13, lines 39-42, Frazier discloses the receive carrier sense variable may be derived directly form the MII signal RX_DV, and is used to indicate*

Art Unit: 2666

incoming bits. It is also well-known that RX_DV is an analog signal. Thus, the recitation thereat is corresponding to the step of receiving).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to implement Frazier's teaching into Simmons' system to arrive the claimed invention with a motivation to provide a flow control mechanism for a full-duplex Ethernet network as well as increasing the network capacity.

Regarding **claim 15**, in according to Figures 2-4, col. 6, line 5 to col. 10, line 12, Simmons discloses a flow control method (corresponding to "method for preserving frame order of a plurality of frames" in a half duplex Ethernet network (Figure 2) (corresponding to "plurality of communication links"), the method comprising, among other things, assigning a pointer value to each of a plurality of records in a buffer receiving a corresponding plurality of frames based, at least in part, on a destination port (*note: col. 8, lines 21-43, Simmons discloses rules checker 42 or 68 places the port vector and the corresponding frame pointer into the port vector FIFO 63. Then, the port vector FIFO 63 assigns the frame pointer to the appropriate destination port(s) by placing the frame pointer into the top of the appropriate output queue 67 (corresponding to claimed "based on a relative order in which the indications are received" because the frame pointer is placed into the top of the output queue 67), the pointer values (col. 9, line 62; frame pointers) associated with the plurality of records in the buffer being used to determine an order according to complete reception of the frame (col. 7, lines 47-56) in which the corresponding frames are promoted from the buffer to a system state (col.*

Art Unit: 2666

8, line 21 to col. 10, line 3). Thus, the recitation thereat reads on the claimed limitation set forth.

Note that Simmons, in according to col. 6, lines 50-56, also discloses one of the advantages of using external rule checker 44 is increasing the capacity of the network. Moreover, Simmons, in according to Figure 2A, also shows signal RX_DVB, as known in the Gigabit Ethernet world is Received Data Valid signal, when enable causes MII 28 in the interface 12 to receive data on RXDB.

Simmons fails to explicitly disclose the step of receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links (multi-link trunk). However, the step of receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links is well known and discloses by Frazier.

In according to Figures 1, 3C-3D and 6, the abstract and col. 6, lines 6-9, col. 9, line 31 to col. 10, line 24, and col. 13, lines 39-42, Frazier discloses flow control method in a full duplex Ethernet network comprising, among other steps, the step of receiving up to a plurality of indications denoting the start of frame transmission on a corresponding plurality of communication links (*note: Fig. 4; physical link 20 is a multi-link trunk and col. 6, lines 6-9, Frazier discloses when RX_DV is asserted on the MII, MAC receive processing logic accepts and process data from the physical layer, and then passes the processed data to the logical link control layer and col. 13, lines 39-42, Frazier discloses the receive carrier sense variable may be derived directly form the MII*

Art Unit: 2666

signal RX_DV, and is used to indicate incoming bits. Therefore the recitation thereat is corresponding to the step of receiving).

Thus, it would have been obvious to those skilled in the art at the time of the invention was made to implement Frazier's teaching into Simmons' method to arrive the claimed invention with a motivation to provide a flow control mechanism for a full-duplex Ethernet network as well as increasing the network capacity.

Regarding **claim 16**, in addition to features recited in base claim 15 (see rationales pertaining the rejection of base claim 15 discussed above), Simmons in view of Frazier also teaches wherein the multi-link trunk is comprised of a plurality of physical links aggregated as a single logical link (see '559, Fig. 4, link 20 and col. 12, lines 16-61).

Regarding **claim 17**, in addition to features recited in base claim 15 (see rationales pertaining the rejection of base claim 15 discussed above), Simmons in view of Frazier also teaches wherein the indications are an analog signal denoting receives data valid (see '028, Figs. 2A-2B; RX_DVA, RX_DVB and RX_DVC and '559, Fig. 5, RX_DV).

Regarding **claim 18**, in addition to features recited in base claim 15 (see rationales pertaining the rejection of base claim 15 discussed above), Simmons in view of Frazier also teaches promoting the received frames from the buffer based on pointer value order (see '028, col. 8, lines 28-33).

Response to Arguments

9. Applicant's arguments filed 4/26/04 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 4/26/04.

In the Remarks of the outstanding response, on page 5, second paragraph, Applicants merely regard the 35 U.S.C 101, Double Patenting rejection of claims 1-22. Applicants are reminded that a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

On page 6 of the response, pertaining Examiner's response to the Applicants' arguments in the response filed 10/22/03 in the last Office Action, Applicants state *"Applicant did not argue that the complete frame is received. Applicants argue that the promotion order is in accordance to a complete reception of the frame (as opposed to initial reception or partial reception). In other words, the order in which the frame is promoted to a system state is based on the complete reception of the frame. Since the frames are transmitted over a number of communication links, the time for each complete reception may be different. See Specification page 17, lines 12-18"*.

In response Examiner respectfully disagrees. The Office Action has clearly pointed out in '028 patent, col. 7, lines 46-51, Simmons discloses the frame are received and promoted to system state as a whole, not fragmented and in '132 patent, col. 6, lines 45-51, Muller discloses the switching element 100 provides a wire speed

Art Unit: 2666

routing and forwarding (packet received on a given input port is complete before forwarding), contradistinction to the Applicants' allegation. Moreover, contradistinction to the Applicants' assertion, in the Specification, on page 17, lines 12-18, it is disclosed *"That is to say that the innovation of preserving state information of the order of frame transmission on the receive side by relying on network standard signaling which denotes the commencement of frame transmission, assigning a pointer value to identify the received frame, and then promoting the frames to a system state in order of pointer value may well be practiced in many different forms in many different network architecture/topologies without deviating from the spirit and scope of the present invention."* From the above passage, there is not a slight remnant of *"the order in which the frame is promoted to a system state is based on the complete reception of the frame"*, to support the Applicants' assertion.

Also on page 6 of the response, Applicants argue *"Simmons and Muller do not address the multiple links. In Simmons, each frame entering the switch is transmitted either to one or multiple ports ... Therefore, it is impossible to maintain a "relative order" and to determine an order according to complete reception of the frame"*.

In response Examiner respectfully disagrees and asserts the Simmons and Muller do indeed address the multiple links. Evidences can be found in Simmons' Figure 1, MACs 60-62 and Mullers' Figure 1, elements 117 and the description throughout the references.

It is noted that in the Remarks of the outstanding response, pertaining the rejection of claims 1-3 and 6-8 under 35 U.S.C. 103(a) as being unpatentable over

Art Unit: 2666

Bellenger in view of Muller, Applicants fail to properly address the rejection by attacking only the Muller reference, not the Bellenger reference. In other words, Applicants attack references individually in a 103 rejection. Applicants cannot show non-obvious by attacking references individually where, as here the rejections are based on combination of references. *In re Keller*, 208 USPQ 871 (CCA 1981).

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments. Due to the response fails to place the application in a better form for allowance and the arguments are not persuasive, the rejection from last Office Action is maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the

Art Unit: 2666

examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frank Duong
Examiner
Art Unit 2666

May 21, 2004